Hydrologic Model Manager

Short Name	ILSD
Long Name	Illinois Least-Cost Sewer System Design Model
Description	
Model Type	ILSD is an event based model through simulation of rainfall-runoff process and discrete differential dynamic programming (DDDP) to determine the system-least-design of sewers in a network for urban watersheds.
Model Objectives	For least cost optimal design of sewer sizes and slopes in a network system with design rainfall as input
Agency Office	V.T. Chow Hydrosystems Lab, University of Illinois at Urbana-Champaign
Tech Contact	Dr. Ben C. Yen, Dept. of Civil and Environmental Engineering, University of Illinois, 205 N. Mathews Ave. Urbana, IL 61801, Fax: (217) 333-0687
Model Structure	Watershed: catchments drain into manholes; manhole numbers representing sewer network; sewer length; ground elevation at manhole; size f catchments; size or percentage area of pervious and impervious surfaces of each catchment; SCS soil type for pervious surface. Rainfall: Input hydrographs or with IDE which can be a single hyetograph or different hyetographs for design of different sewers. Runoff: Runoff is simulated through time-area method and hydrograph time-shift method Design Constraints: Minimum soil cover of sewers, flow velocity restrictions, acceptable risk if the risk-based design option is used
Interception	
Groundwater	
Snowmelt	
Precipitation	
Evapo-transpiration	
Infiltration	
Model Paramters	
Spatial Scale	Unrestricted watershed size
Temporal Scale	Event based model with time discretization specified by user or computed in model by default
Input Requirements	
Computer Requirements	
Model Output	Runoff hydrographs (optional) and diameter and end elevation of sewers
Parameter Estimatn Model Calibrtn	
Model Testing Verification	Compared favorably with the rational method and other sewer design models
Model Sensitivity	
Model Reliabiity	
Model Application	Various applications/case studies in U.S. and Taiwan
Documentation	Yen, B.C., Cheng, S.T., Jun, B-H., Voorhees, M.L., and Wenzel, Jr., H.G. (1984). “Illinois Least-Cost Sewer System Design Model: ILSD-1 & 2 User’s Guide.” Research Report 188, Water Resources Center, University of Illinois at

	Urbana-Champaign
Other Comments	
Date of Submission	5/1/2001 1:45:40 PM
Developer	
Technical Contact	
Contact Organization	